

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/013487 A1

(51) International Patent Classification⁷: **H03K 17/0412**

(21) International Application Number:

PCT/IB2004/051294

(22) International Filing Date: 27 July 2004 (27.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

03102399.7

1 August 2003 (01.08.2003) EP

(71) Applicant (for DE only): **PHILIPS INTELLECTUAL PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).

(71) Applicant (for all designated States except DE, US):
KONINKLIJKE PHILIPS ELECTRONICS N. V.
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven
(NL).

(72) Inventors; and

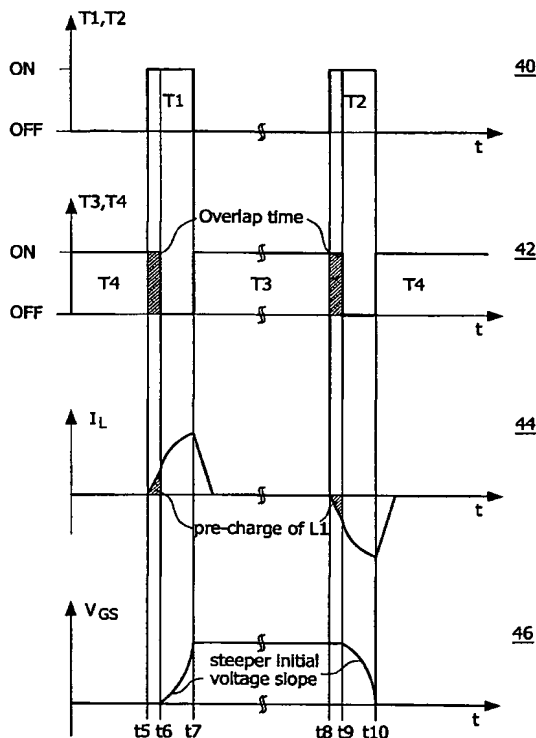
(75) Inventors/Applicants (for US only): **TOLLE, Tobias,**
Georg [DE/DE]; c/o Philips Intellectual Property &
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).
DÜRBAUM, Thomas [DE/DE]; c/o Philips Intellectual
Property & Standards GmbH, Weissshausstr. 2, 52066
Aachen (DE). **SAUERLÄNDER, Georg** [DE/DE]; c/o
Philips Intellectual Property & Standards GmbH, Weis-
shausstr. 2, 52066 Aachen (DE). **LOPEZ, Toni** [ES/DE];
c/o Philips Intellectual Property & Standards GmbH,
Weissshausstr. 2, 52066 Aachen (DE).

(74) Agent: **MEYER, Michael**; Philips Intellectual Property &
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,

[Continued on next page]

(54) Title: HIGH FREQUENCY CONTROL OF A SEMICONDUCTOR SWITCH



(57) Abstract: Resonant gate driver circuits provide for an efficient switching of, for example, a MOSFET. However, often an operation of the resonant gate driver circuit does not allow for an application where high switching frequencies are required. According to the present invention, a pre-charging of the inductor of the resonant gate drive circuit is performed. This allows for a highly energy efficient and fast operation of the MOSFET.



KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.